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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/082,737	02/25/2002	Juergen Dirks	01-158 1496.00186	4705

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EXAMINER
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TRIMMINGS, JOHN P

ART UNIT	PAPER NUMBER
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2133

DATE MAILED: 08/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/082,737	<b>Applicant(s)</b> DIRKS ET AL.	
	<b>Examiner</b> John P Trimmings	<b>Art Unit</b> 2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 25 February 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/25/02 &amp; 4/29/02</u> | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 1-20 are presented for examination.

#### ***Drawings***

1. Figures 1 and 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The examiner is not sure, according to the wording of the claim, as to what the claim is limiting: a next I/O, or a group buffer, or both.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Scheck, U.S. Patent No. 6381719. The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention “by another,” or by an appropriate showing under 37 CFR 1.131.

As per Claim 1:

Scheck teaches an apparatus comprising: one group of boundary scan cells (FIG.1); one group buffer (column 3 lines 45-47 and FIG.1 104) coupled to said group of boundary scan cells (FIG.1 112); one repeater buffer coupled in series with said group buffers (FIG.3 320); and a controller coupled to said group of boundary scan cells through said group buffer and said repeater buffer (FIG.1

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104), wherein said apparatus is configured to buffer said groups of boundary scan cells to reflect an order of I/Os around said apparatus (FIG.4A u2 and dout).

As per Claim 2:

Scheck further teaches the apparatus according to claim 1, wherein said group of boundary scan cells comprise a scan chain (column 2 lines 57-59).

As per Claim 3:

Scheck further teaches the apparatus according to claim 2 wherein said repeater buffers are configured to eliminate skew at the beginning pins and end pins of the scan chain (see Abstract).

As per Claim 4:

Scheck further teaches the apparatus according to claim 1 wherein said apparatus further comprises: one or more boundary scan control nets configured to control said group of boundary scan cells (FIG.7 402).

As per Claim 5:

Scheck further teaches the apparatus according to claim 1, wherein said apparatus is configured to route said group of boundary scan cells in an I/O portion of said apparatus (column 1 lines 39-43, 58-63).

As per Claim 6:

Scheck further teaches the apparatus according to claim 1, wherein each boundary scan cell of said group of boundary scan cells are implemented within an I/O cell (FIG.4A dout).

As per Claim 7:

Scheck further teaches the apparatus according to claim 1, wherein said apparatus comprises a clock chain in a first direction and a data path in an opposite direction of said first direction (column 8 lines 21-25).

As per Claim 8:

Scheck further teaches the apparatus according to claim 1, wherein a scan connection of apparatus is controlled by a scan enable signal (FIG.4A shift and mode).

As per Claim 9:

Scheck further teaches the apparatus according to claim 1, wherein said apparatus implements one or more flip flips, each configured to provide a scan enable output (FIG.4A dout).

As per Claim 10:

Scheck teaches an apparatus comprising: means for implementing one group of boundary scan cells (FIG.1); means for implementing one group buffer coupled to each one said groups of boundary scan cells (column 3 lines 45-47 and FIG.1 120); means for implementing one repeater buffer coupled in series with said group buffer (FIG.3 320); and means for controlling coupled to said groups of boundary scan cells through said group buffer and said and repeater buffers (FIG.7 402); means for buffering said group of boundary scan cells to reflect an order of I/Os around said apparatus (column 1 lines 39-43, 58-63).

2. Claim 11 is rejected under 35 U.S.C. 102(e) as being anticipated by Fisher, U.S. Patent No. 6721923. Fisher teaches a method for optimizing buffers for JTAG boundary scan nets, comprising the steps

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- (A) reading a netlist; (column 8 lines 56-59)
- (B) reading an I/O order list; (column 8 lines 60—62)
- (C) defining a number of I/Os per groups; (column 8 lines 63-67)
- (D) determining if a last I/O is connected; (column 9 lines 21-29) and
- (E) writing a final netlist (column 9 lines 18-20).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 12-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fisher, U.S. Patent No. 6721923 as applied to Claim 11, and in view Scheck, U.S. Patent No. 6381719. Fisher teaches the process of optimizing the buffers and the circuits taught by Scheck, including group buffer, repeater buffers, reflecting the order of the I/O pins in relation to boundary scan cells, and in an automatic (Scheck, column 3 lines 34-66) manner. The motivation for one skilled in the art at the time of the invention is to build the circuit taught by Scheck, which is a JTAG controlled circuit. And Fisher, in column 2 lines 24-31, boasted of the advantage of using the invention which was specifically tailored for designing JTAG circuits. One with ordinary skill in the art at the time of the

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invention, motivated as suggested by Fisher, would have used the teachings of Fisher to build the circuit of Scheck, and so Claims 12-20 are rejected.

### ***Conclusion***

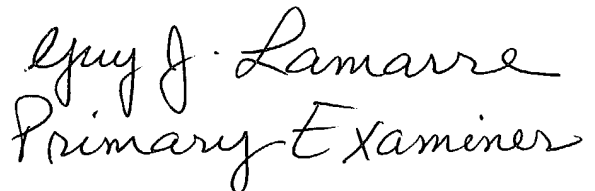
Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P Trimmings whose telephone number is 703-305-0714. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on 703-305-9595. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John P Trimmings  
Examiner  
Art Unit 2133



Primary Examiner